

WHAT IS CLAIMED IS:

1. A data storage medium comprising:
 - a first memory area that is read-only and stores first certification data that is
5 unique to the data storage medium;
 - a second memory area that stores data and second certification data supplied
from the outside;
 - an identity circuit for determining whether or not the first and second
certification data are identical with each other; and
10 a switch circuit for providing the data stored in the second memory area to the
outside only when the identity circuit determines that the first and second certification
data are identical with each other.
2. The data storage medium of claim 1, wherein the first and second memory
15 areas are reserved in a NAND-type flash memory.
3. The data storage medium of claim 1, wherein the identity circuit has:
 - a generator for generating binary data and inverted binary data from the first
certification data; and
20 an adder for adding the inverted binary data of the first certification data to
binary data corresponding to the second certification data, and wherein the switch circuit
has:
a circuit for connecting the second memory area to an output terminal only
when a sum provided by the adder consists of all 1s.
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4. The data storage medium of claim 1, wherein the first memory area stores
binary data and inverted binary data both corresponding to the first certification data.
5. The data storage medium of claim 4, further comprising:
 - a tester for checking to see if the first certification data was altered;
30 a switch circuit for providing the data stored in the first memory area to the

outside only when the tester determines that the first certification data was not altered.

6. The data storage medium of claim 5, wherein the tester has:
a reader for reading the binary data and inverted binary data both corresponding
5 to the first certification data from the first memory area; and
an adder for adding the read binary data and inverted binary data to each other,
and wherein the switch circuit has:
a circuit for connecting the first memory area to an output terminal only when a
sum provided by the adder consists of all 1s.

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7. A data storage medium comprising:
a first memory area that is read-only and stores first certification data that is
unique to the data storage medium;
a second memory area that stores data and second certification data supplied
15 from the outside;
an encoder for encoding the first certification data into third certification data;
a specific memory area defined in the second memory area according to the
first certification data, to store the third certification data;
an identity circuit for determining whether or not the second and third
20 certification data are identical with each other; and
a switch circuit for providing the data stored in the second memory area to the
outside only when the identity circuit determines that the second and third certification
data are identical with each other.

25 8. The data storage medium of claim 7, wherein the first and second memory
areas are reserved in a NAND-type flash memory.

9. The data storage medium of claim 7, wherein the identity circuit has:
a generator for generating inverted binary data from binary data corresponding
30 to the third certification data; and
an adder for adding the inverted binary data of the third certification data to

binary data corresponding to the second certification data, and wherein the switch circuit has:

a circuit for connecting the second memory area to an output terminal only when a sum provided by the adder consists of all 1s.

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10. The data storage medium of claim 7, wherein the specific memory area stores binary data and inverted binary data both corresponding to the third certification data.

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11. The data storage medium of claim 7, further comprising:

a tester for testing to see if the third certification data was altered;

a switch circuit for providing the third certification data to the outside only when the tester determines that the third certification data was not altered.

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12. The data storage medium of claim 11, wherein the tester has:

a reader for reading the binary data and inverted binary data both corresponding to the third certification data from the specific memory area; and

an adder for adding the read binary data and inverted binary data to each other, and wherein the switch circuit has:

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a circuit for connecting the specific memory area to an output terminal only when a sum provided by the adder consists of all 1s.

13. A data storage medium comprising:

25 a semiconductor element having a first memory area, a second memory area, first wiring for controlling data write and erase operations of the first memory area, a first terminal for controlling the first wiring, second wiring for controlling a data write operation of the second memory area, and a second terminal for controlling the second wiring;

30 an external terminal connected to the second terminal and electrically separated from the first terminal;

a support material for supporting the semiconductor element and external terminal so that the semiconductor element is covered with the support material and the

external terminal is exposed from the support material; and
certification data that is unique to the semiconductor element, stored in the first
memory area.

5 14. The data storage medium of claim 13, further comprising:
a circuit for controlling a conducting state arranged between the first terminal
and the first wiring.

10 15. The data storage medium of claim 13, further comprising:
a transistor arranged between the first memory area and the first wiring, a gate
electrode of the transistor being connected to the first terminal.

15 16. A data storage medium comprising:
a wiring board having first and second faces;
a semiconductor element mounted on the first face of the wiring board, having
a first memory area, a second memory area, first wiring for controlling data write and
erase operations of the first memory area, a first terminal for controlling the first wiring,
second wiring for controlling a data write operation of the second memory area, and a
second terminal for controlling the second wiring;
20 an external terminal arranged on the second face of the wiring board, connected
to the second terminal, and electrically separated from the first terminal;
a resin seal for covering the first face of the wiring board and the
semiconductor element; and
certification data that is unique to the semiconductor element, stored in the first
25 memory area.

17. The data storage medium of claim 16, further comprising:
a module for integrating the semiconductor element, external terminal, and
resin seal into one; and
30 a card-type support for supporting the module.

18. A method of manufacturing a data storage medium, comprising the steps of:

forming semiconductor elements on a semiconductor substrate, each of the semiconductor elements having a first memory area, a second memory area, first wiring for controlling data write and erase operations of the first memory area, second wiring for controlling a data write operation of the second memory area, a first terminal for controlling the first wiring, and a second terminal for controlling the second wiring;

writing unique certification data into the first memory area of each of the semiconductor elements;

cutting the semiconductor substrate to separate the semiconductor elements from one another into semiconductor chips;

arranging each of the semiconductor chips on a wiring board having an external terminal; and

connecting, on each of the semiconductor chips, the second terminal to the external terminal and sealing each of the semiconductor chips so that the first terminal is electrically isolated.

19. A data recording apparatus for recording data in a data storage medium having a semiconductor memory that stores certification data unique to the data storage medium, comprising a data processing unit that includes:

a memory for storing a first code that is unique to the data processing unit;

means for acquiring the certification data from the data storage medium;

means for generating a second code based on the first code and certification data;

means for encoding the data based on the second code; and

means for writing the encoded data into the semiconductor memory of the data storage medium.

20. The data recording apparatus of claim 19, wherein the data processing unit is a second data storage medium that is removably attached to the data recording apparatus.

21. The data recording apparatus of claim 20, wherein the second data storage medium is a smart card.

5 22. The data recording apparatus of claim 19, wherein the data processing unit further has means for writing the acquired certification data into the semiconductor memory of the data storage medium.

23. The data recording apparatus of claim 22, wherein the data processing
10 unit is a second data storage medium removably attached to the data recording apparatus.

24. The data recording apparatus of claim 23, wherein the second data storage medium is a smart card.

15 25. A data reading apparatus for reading data from a data storage medium having a semiconductor memory that stores certification data unique to the data storage medium, comprising a data processing unit that includes:

 a memory for storing a first code unique to the data processing unit;
 means for acquiring the certification data from the data storage medium;
20 means for generating a second code based on the first code and acquired certification data;
 means for reading the data from the data storage medium; and
 means for decoding the read data based on the second code.

25 26. The data reading apparatus of claim 25, wherein the data processing unit is a second data storage medium removably attached to the data reading apparatus.

27. The data reading apparatus of claim 26, wherein the second data storage
medium is a smart card.

30 28. A data storage medium removably attached to a data recording apparatus

that records data in a second data storage medium having a semiconductor memory that stores certification data unique to the second data storage medium, comprising:

a memory for storing a first code that is unique to the data storage medium;
means for acquiring the certification data from the second data storage

5 medium;

means for generating a second code based on the first code and acquired certification data;

means for receiving data from the data recording apparatus,

means for encoding the received data based on the second code; and

10 means for writing the encoded data into the second data storage medium.

29. The data storage medium of claim 28, further comprising means for writing the acquired certification data into the second data storage medium.

15 30. A data storage medium removably attached to a data reading apparatus that reads data from a second data storage medium having a semiconductor memory that stores certification data unique to the second data storage medium, comprising:

a memory for storing a first code that is unique to the data storage medium;

means for acquiring the certification data from the second data storage

20 medium;

means for generating a second code based on the first code and acquired certification data;

means for reading the data from the second data storage medium; and

means for decoding the read data based on the second code.